

Name _____

Human Sex-linked Traits

One of the important genes carried on the X chromosome is responsible for normal color vision. The dominant allele (N) produces normal color vision. The recessive allele (n) causes colorblindness.

1. Cross a homozygous normal female with a colorblind male. List the genotypic and phenotypic ratios.

Genotypic ratio:

Phenotypic ratio:

2. Cross a heterozygous normal female with a colorblind male. List the genotypic and phenotypic ratios

Genotypic ratio:

Phenotypic ratio:

3. Cross a colorblind female with a normal male. List the genotypic and phenotypic ratios.

Genotypic ratio:

Phenotypic ratio:

4. Cross a heterozygous normal female with a normal male. List the genotypic and phenotypic ratios.

Genotypic ratio:

Phenotypic ratio:

5. Is colorblindness more common in males or females? Why?

Hemophilia is a serious sex-linked defect in humans. It results in failure of the blood to clot properly. A mother who is $X^H X^h$ is considered a carrier of hemophilia, but does not have hemophilia herself.

6. Cross a heterozygous normal female (carrier) with a normal male. List the ratios.

Genotypic ratio:

Phenotypic ratio:

7. Cross a homozygous normal female with a male who has hemophilia. List the ratios.

Genotypic ratio:

Phenotypic ratio: